


AMENDMENT

Please amend the claims without prejudice, without admission, without surrender of subject matter, and without any intention of creating any estoppel as to equivalents, as follows:

In the Claims:

1. (Amended) An isolated nucleic acid molecule encoding a protein with the function of a potato  $\beta$ -amylase, selected from the group consisting of:

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- a) nucleic acid molecules which encode a protein which encompasses the amino acid sequence stated under SEQ ID NO: 2 ~~or its derivatives or parts;~~
  - b) nucleic acid molecules which encompass the nucleotide sequence shown under SEQ ID NO: 1, or nucleic acid molecules which have at least about 85% sequence identity with SEQ ID NO: 1 ~~or its derivatives or parts, or a corresponding ribonucleotide sequence;~~
  - c) nucleic acid molecules which hybridize under stringent conditions with, ~~preferably which hybridize specifically with,~~ or are complementary to, the nucleic acid molecules stated under a) or b), and
  - d) nucleic acid molecules whose nucleotide sequence deviates from the sequence of the nucleic acid molecules stated under a), b) or c) owing to the degeneracy of the genetic code.

2. (Amended) A recombinant nucleic acid molecule containing:

- a) a the nucleic acid molecule encoding a protein with the function of a potato  $\beta$ -amylase as claimed in claim 1, and
- b) one or more nucleotide sequences which encode a one or more proteins selected from ~~amongst~~ group A, ~~composed~~ consisting of ~~proteins with the function of~~ branching enzymes, ADP glucose pyrophosphorylases, granule-bound starch synthases, soluble starch synthases, debranching enzymes, disproportioning enzymes, plastid starch phosphorylases, R1-enzymes, amylases, glucosidases, ~~parts of said nucleotide sequences, or~~ and nucleic acid molecules which hybridize under stringent conditions with said nucleotide sequences.

3. (Amended) A The nucleic acid molecule as claimed in claim 1, which is a deoxyribonucleic acid molecule.

4. (Amended) A The nucleic acid molecule as claimed in claim 2, which is a cDNA molecule.

5. (Amended) A The nucleic acid molecule as claimed in claim 1, which is a ribonucleic acid molecule.

6. (Cancelled)

7. (Amended) A vector comprising a the nucleic acid molecule as claimed in claim 1.

8. (Amended) A vector comprising a the nucleic acid molecule as claimed in claim 1, wherein the ~~nucleotide sequence~~ nucleic acid molecule encoding a protein with the function of a  $\beta$ -amylase ~~soluble starch synthase III or parts thereof~~ is present in sense ~~or antisense~~ orientation.

9. (Amended) A vector comprising a the nucleic acid molecule as claimed in claim 1, wherein the nucleic acid molecule encoding a  $\beta$ -amylase and the nucleotide sequence encoding one or more proteins selected from group A ~~or parts thereof is~~ are present in sense ~~or antisense~~ orientation.

10. (Amended) A vector comprising a nucleic acid molecule as claimed in claim 1, wherein ~~the nucleotide sequence encoding one or more~~ comprising nucleotide sequences which encode a plurality of proteins selected from group A, wherein at least one nucleotide sequence is ~~partly present in sense orientation and partly~~ at least one nucleotide sequence is in antisense orientation.

11. (Amended) A vector comprising a the nucleic acid molecule as claimed in claim 1, which is linked to regulatory elements which ensure transcription and synthesis of an RNA, which is optionally translatable, in a pro- or eukaryotic cell.

12. (Amended) A host cell which is transformed with a the nucleic acid molecule as claimed in one or more of claims 1-6 or a vector as claimed in one or more of claims 7-11 or a cell which is derived from ~~such a~~ the host cell cell.

13. (Amended) A process for the generation of a transgenic plant cell which synthesizes a modified starch, ~~wherein a~~ comprising integrating the nucleic acid molecule as

claimed in one or more of claims 1-6 or a vector as claimed in claim 7-11 ~~is integrated~~ into the genome of a plant cell.

14. (Amended) A plant cell which is obtained by a the process as claimed in claim 13.

15. (Amended) A process for generating a transgenic plant which synthesizes a modified starch comprising regenerating ~~where an intact plant is regenerated from a~~ the cell as claimed in claim 14.

16. (Amended) A plant comprising a the plant cell as claimed in claim 14.

17. (Amended) A The plant as claimed in claim 16, which is a useful plant.

18. (Amended) A The plant as claimed in claim 16, which is a starch-storing plant.

19. (Amended) A The plant as claimed in claim 16, which is a wheat, maize, potato or rice plant.

20. (Amended) Propagation material of a the plant as claimed in claim 16.

21. A process for the production of starch comprising isolating starch from ~~by a method known per se, wherein~~ the plant cells as claimed in claim 14, the plants as claimed in claim 16 or propagation material as claimed in claim 20 ~~are integrated into the process~~.

22. (Withdrawn)

23. (Withdrawn)

24. (Amended) The use of nucleic acid molecules as claimed in one or more of claims 1-6 or vectors as claimed in one or more of claims 7-11 for the generation of transgenic cells, ~~preferably bacterial or plant cells~~.

25. (Cancelled)

26. (New) The nucleic acid molecule of claim 2, wherein the one or more proteins selected from group A are glucosidases.

27. (New) An isolated recombinant nucleic acid molecule encoding a fragment of a potato  $\beta$ -amylase of SEQ ID NO:2, wherein the fragment is at least about 15 nucleotides in length, and wherein the nucleic acid molecule inhibits synthesis of endogenous  $\beta$ -amylase when introduced into plants.

28. (New) The nucleic acid molecule of claim 27, wherein the fragment is at least about 150 nucleotides in length.

29. (New) The nucleic acid molecule of claim 27, wherein the fragment is at least about 500 nucleotides in length.

30. (New) The nucleic acid molecule of claim 27, wherein the synthesis of endogenous  $\beta$ -amylase is inhibited by cosuppression.

31. (New) The nucleic acid molecule of claim 27, wherein the synthesis of endogenous  $\beta$ -amylase is inhibited by antisense.

32. (New) A vector comprising the nucleic acid molecule of claim 27.

33. (New) The vector according to claim 32, wherein the nucleic acid molecule encoding the fragment of a  $\beta$ -amylase is present in antisense orientation.

34. (New) An isolated recombinant nucleic acid molecule comprising:

(a) at least one sequence encoding a fragment of a potato  $\beta$ -amylase of SEQ ID NO:2; and

(b) at least one sequence encoding a fragment of one or more proteins selected from the group consisting of branching enzymes, ADP glucose pyrophosphorylases, granule-bound starch synthases, soluble starch synthases, debranching enzymes, disproportioning enzymes, plastid starch phosphorylases, R1-enzymes, amylases, and glucosidases,

wherein the fragments are at least about 15 nucleotides in length, and wherein the nucleic acid molecule inhibits synthesis of endogenous  $\beta$ -amylase and endogenous protein of (b) when introduced into plants.

35. (New) The nucleic acid molecule of claim 34, wherein the fragments are at least about 150 nucleotides in length.

36. (New) The nucleic acid molecule of claim 34, wherein the fragments are at least about 500 nucleotides in length.

37. (New) The nucleic acid molecule of claim 34, wherein the protein is glucosidase.

38. (New) The nucleic acid molecule of claim 34, wherein the synthesis of endogenous  $\beta$ -amylase and endogenous protein(s) of (b) is inhibited by cosuppression.

39. (New) The nucleic acid molecule of claim 34, wherein the synthesis of endogenous  $\beta$ -amylase and endogenous protein(s) of (b) is inhibited by antisense.

40. (New) A vector comprising the nucleic acid molecule of claim 34.

41. (New) The vector according to claim 40, wherein the sequence encoding the fragment of a  $\beta$ -amylase is present in antisense orientation.